Revision number:

Purchasing Agent: David Gill
(801) 538-3254

Item: Vehicular Traffic Signals

Vendor: 06518E	McCain, Inc. 8120 304th Ave. SE Preston, WA 98050
Internet Homepage:	www.mccaintraffic.com
Telephone:	(425) 222-3653
Fax number:	(425) 222-3672
Contact:	Ann Hart
Email address:	ahart@mccaintraffic.com
Brand/trade name:	McCain/Gelcore LED
Price:	See attached price schedule (page 7)
Terms:	Net 30 days
Effective dates:	02/02/2005 through 02/01/2008
Days required for delivery:	30-45 days
Price guarantee period:	3 years
Minimum order:	N/A
Min shipment without charges:	
Other conditions:	Potentially renewable until 02/01/2010 **Contract** will be for three (3) years with two (2) additional one (1) year renewal options.

THIS IS A NEW CONTRACT.

This contract resulted from bid GL5025

Remittance Address: McCain, Inc.
2365 Oak Ridge Way
Vista, CA 92081

Also see contract MA1861

This contract covers only those items listed in the price schedule. It is the responsibility of the agency to ensure that other items purchased are invoiced separately. State agencies will place orders directly with the vendor (creating a PG in Finet) and make payments for the same on a PV referencing the original PG. Agencies will return to the vendor any invoice which reflects incorrect pricing.

GENERAL DESCRIPTION: To provide the State with Vehicular Traffic Signals.
In addition to meeting these specifications, all signal head assemblies shall also meet the requirements of the latest edition of Manual on Uniform Traffic Control Devices (MUTCD) and the ITE standard for Vehicle Traffic Control Signal Heads.

PRODUCTS

1. Signal Head – 12 inch and 8 inch

The assembly shall be constructed of the materials and alloys specified in the current ITE's Standards for Vehicular Traffic Control Signal Heads. Provide traffic signal heads with minimum weight but maximum rigidity and strength.

1.1 **Assembly/Housing**

One-piece die-cast aluminum unit with top and bottom opening of the assembly shall each have an integral serrated boss that will provide positive positioning of a signal head in five degrees increments so as to eliminate undesirable rotation or misalignment of the signal head as well as misalignment between sections. The top and bottom opening shall have reinforcing ribs. A total of 72 teeth shall be provided in the serrated boss. The serrated area shall start at the outside of the 2-inch hole. It shall be at least 1/8 inch wide and 3/64 inch deep. The teeth shall be clean and sharp so as to provide positive locking with the grooves of the mating section of framework or brackets. The assembly shall have latch pads and manual stainless steel latching devices that are captive, or non-removable. Twelve-inch section shall have at least two latching points. Eight-inch section shall have at least one latching point.

The top and bottom of the assembly shall have an opening to accommodate Astro-bracket mounting device. For Type V signal, there should be a 2-way tri-stud arm assembly to provide connection for the bottom opening for Astro-bracket mounting. In addition, provide opening for top and bottom to accept standard 1½-inch pipe hardware.

All hardware used in this section such as hinge pins, door latching devices and washers, screws and fittings shall be constructed of stainless steel. All components shall be readily accessible when the door is opened. Maintenance and/or replacement of components shall be done using standard tools.

Each signal section shall be designed to allow the drainage of water accumulated inside of the assembly. Washers between signal sections (such as tri-stud fasteners) shall be 3/32-inch minimum thickness. Washer distortion of more than 1/16 inch will not be allowed when assemblies and attachment hardware are fastened together. This washer shall also be constructed of stainless steel. All sections comprising a single signal face shall be rigidly and securely fastened together into a dust and insect, weather tight unit.
The nut bolts for the tri-stud fasteners shall have serrated teeth around the perimeter to provide positive locking.

Housing maybe fastened together to make multi-section signals. The 8" and 12" housings can be intermixed to form combination signals. All housing shall have labeling of each signal indication color in capital letters, "RED", "YELLOW" or "AMBER" and "GREEN"; or "R", "Y" and "G" next to each terminal block to identify socket lead wire attachments. All

housings shall have a cast boss provided for mounting a 5 position terminal strip including the neutral wire.

The housing shall include attachment mechanisms for optional installation of a reflector. The housing shall be LED ready and include LED module per attached LED module specification.

1.2 **Door and Mounting**

One-piece die-cast aluminum unit with two integrated hinge lugs mounted to the housing with two stainless steel hinge pins. Positive latching shall include stainless steel eyebolts and wing nut assemblies. A moisture proof and dust tight seal rubber gasket fitted into the gasket channel cast in the perimeter of the door.

1.3 **Visor**

One-piece formed aluminum unit. The visor shall be twist on type tunnel design. The rear of the visor shall have four tabs, notches or holes for attaching the visor to the door with 4 stainless steel screws to the face of the door. All visors shall have a minimum downward tilt of 3.5 degrees measured from the center of the lens. Visors for 12-inch signals shall have a length of not less than 9.5 inches. Visors for 8-inch signals shall have a length of not less than 7 inches. Tunnel visors shall encircle and shield the lens from 300 degrees, plus or minus 10 degrees.

1.4 **Terminal Block**

Each signal head shall be equipped with a barrier-type terminal block providing separate screws for each signal section and neutral wires.

A minimum of one 5-connection terminal block shall be provided in all three section signal head assemblies. A minimum of two 5-connection terminal blocks shall be provided in all five section signal head assemblies. Terminal block is installed in the amber section of the traffic signal. The terminal block shall include one side with a quick disconnect terminal or spade lugs (insulated) socket leads and the opposite with a screw clamp terminal for field wiring.

1.5 **Reflector**

A separately hinged alzak aluminum is standard.

1.6 **Reflector Ring**

Die cast aluminum ring is mounted in the signal housing using stainless steel dowel pins and a spring assembly, permitting hinging and removal of the reflector assembly without the use of any special tools.

1.7 **Lamp Socket**

Insulated, pre-focused, and may be rotated for positioning the lamp filament without using tools. Wiring insulation conforms to conductor rating of 105°C and is 18 AWG.

1.8 **Optical**

Optical unit shall consist of the lens, the reflector, the lamp and the lamp receptacle.

1.9 **Lens**

The prism traffic signal lens shall be standard circular red, yellow, or green and shall conform to the latest revision of the ITE and MUTCD standard specifications. The lens shall fit into a specially designed, slotted, extruded, and bonded full-circle lens gasket designed to fit the housing door in such a manner so as to exclude moisture, dust and road film. The lens and gasket shall be secured to the door with four stainless lens clips and stainless steel screws to create a moisture and dust proof seal. The lens shall be polycarbonate, glass or LED as specified.

1.10 **Gaskets**

Gaskets shall be provided to assure a weatherproof seal to exclude dust and moisture between the body of the assembly and door, between the lenses and reflector. Gasket shall be glued or sealed, where they meet, to provide one continuous length of gasket. Gasket materials shall be made with weather resistant material that has been temperature stabilized so as to prevent any residue that could collect on the internal surfaces of the signal head.

1.11 **Painting**

Aluminum signal heads including all exterior surfaces of the aluminum signal head housing, door, visors and louvered back plates shall be pretreated for powder coat painting with a base metal preparation of the entire head assembly to prevent normal deterioration by environmental conditions. The inside surface of the visor shall be a dull non-reflective black. Powder coat painting procedures and specifications shall be furnished during initial certification submittal.

1.12 **Color of Signal Heads**

The exterior including housing, door and visor color shall be yellow or black. The 2-way tri-stud arm for five section signal heads shall match the color of the signal heads.

2. Light Emitting Diode (LED) Vehicular Traffic Signal Module

The Vehicular Traffic Signals shall be compatible with UDOT's current LED Traffic Signal Modules that are currently being purchased off of State Contracts PD-1786 - Leotek and PD-1804 - Gades Sales.

The signal head housing shall be design to accommodate LED module installation.
The LED shall fit into extruded gaskets that are placed into the door with four stainless clips and stainless steel screws, to create moisture and dust proof seal.

3. Louvered Back Plates

If used, shall be mounted in a manner that will not interfere with the door operation. On each 12-inch section, four mounting points shall be provided for back plate attachment. On each 8-inch section, three mounting points shall be provided for back plate attachment. The louvered back plates shall have 5 inch exposed width.

The louvered back plates shall be constructed of U.V. stabilized aluminum material. The color of the louvered back plates shall be black both sides and on the edges. The back plates shall fit in standard one section head, three section head, four section head and five section head.

4. Pedestrian Signal Head

Pedestrian head signal assemblies shall meet the requirements of the latest edition of the MUTCD and the ITE standards for Pedestrian Traffic Control Signal Indications.

4.1 **Housing.** The housing is die cast aluminum alloy in accordance with ASTM B 85. The housing shall be one section 16-inch X 18-inch pedestrian traffic signal head to accommodate retrofits and new installation of LED pedestrian modules per UDOT specification. The housing shall include a gasket to provide a dust and rain-tight seal.

4.2 **Terminal Block.** The terminal block shall consist of dual wiring, screw terminal and quick disconnect features for the neutral, walk and don't walk phase.

4.3 **Construction.** The clamshell consists of a two part mounting assembly. The hinge pins on the pole mounted half is stainless steel and fit into the ears on the signal mounted half. The pole half of the assembly shall be designed to fit the curvature of poles 4" in diameter and larger.

The pedestrian signal head shall have the clamshell type mounting (see SL 9 UDOT Standard drawing) that can be securely attached to the signal pole through banding, thru-bolt or lag screw mounting. The bolt holes are elongated horizon tally to allow for rotation on the pole. The closed signal half of the assembly is secured to the pole half through use of a flathead socket bolt and tightened using a 3/16" Allen wrench.

4.4 **Color of Pedestrian Signal Head**

The exterior including housing and door shall be black. Refer to Section 1.11 for painting requirements.

5. Programmable Vehicular Traffic Signals – 12 inch

The 12" die cast aluminum alloy programmable traffic signal heads shall provide a means for precise lane control and high visibility. Signal section can be tilted in 2-degree increments for a maximum of 10-degree increments above and below the horizontal, while still maintaining a common vertical axis. With proper masking of the programming lens, proper lane communication can be obtained.

5.1 Assembly/Housing

Diecast aluminum alloy. Each housing is cast with reinforcing ribs on all sides for extra rigidity.

5.2 Door

Heavy-duty die cast aluminum with two integrated cast hinge lugs mounted to the housing with stainless steel hinge pins. Positive latching is achieved without the use of any special tools by stainless steel eyebolts and wing nut assemblies. A moisture proof and dust tight seal is assured with a neoprene gasket fitted to the gasket channel cast in the perimeter of the door.

5.3 Visor

Visors are formed from .505 aluminum alloy. Each signal section will come with a twist on type tunnel visor. Mounting will be done by using four stainless screws. Visors shall be painted dull black on the inside.

5.4 Terminal Block

Each signal section shall have a 5 position, barrier block with 15 quick disconnect terminals for easy socket lead assembly and 5 screw clamp terminals for field wiring.

5.5 Lamp Socket

Lamp sockets (3 prong) shall be design for installation of PV LED lamp module for programmable signal heads.

5.6 Lens

Acrylic lenses are colored to meet the latest ITE specifications. Colored lenses are bonded to Fresnel optical lens for programmability. Each lens is sealed to the door by a specially extruded EPDM gasket. The lens is held in place by four stainless lens clips and four stainless steel screws to create a moisture and dust proof seal.

5.7 Optical

Programming is accomplished through the use of Fresnel lens and a smaller clear lens. By masking off the area of the small clear lens that you do not want oncoming traffic to see, lane control can be made more positive.

5.8 Painting

Refer to Section 1.11 of this specification.

5.9 Color of signal heads

Refer to Section 1.12 of this specification.

6. LED Lamp Module For Programmable Vehicular Traffic Signals (PV LED Lamp)

LED lamp module for programmable vehicular traffic signal shall conform to latest ITE VTCSH standard. The luminous intensity and chromaticity shall conform to latest ITE VTCSH standard. The LED lamp module shall design as a direct retrofit replacement for PV signals. The failure of single LED shall results in loss of light from that LED only. Minimum luminous intensity shall be maintained when a loss of one or more LED occurs.

The PV LED lamp shall have a color label on back of each unit. Each unit shall come with instructions on the installation of the PV LED lamp onto the programmable traffic signal housing.

7. Special Instructions

The items for Vehicular Traffic Signal Heads in Part 1 shall not include the optical unit (lens, the reflector, the lamp and the lamp receptacle) since these will replaced by LED module. For items with LED modules under Vehicular Traffic Signal Part 1, the LED modules shall come from current UDOT LED contract.

8. Product Usage

These products are used primarily for UDOT maintenance/retrofit needs. In addition, these can also be used for project basis when it is needed.

Warranty/Terms

Two-year guarantee against defects in materials and workmanship from date of original shipment.

Products that do not meet these specifications shall be rejected. The supplier shall supply a quality assurance certification with every shipment that the products are built per specification and have passed quality assurance final inspection, specifically for critical connection points, parts and assemblies. Supplier shall provide a quality assurance process to UDOT during submittal process.

Each traffic signal shall be packed separately in such a manner that there will be no injury or defacement to the signal and mounting assembly during transportation. Each carton shall be legibly marked with the signal and mounting assembly descriptions and supplier's name.

PRICING
VEHICULAR TRAFFIC SIGNAL

1. Three Section Signal Head, LED Ready w/o modules, w/louvered back plate- see contract MA1861
2. Three Section Signal Head, w/LED modules, w/louvered backer plate- see contract MA1861
3. Four Section Signal Head, LED Ready w/o modules, w/louvered backer plate- see contract MA1861
4. Five Section Signal Head, LED Ready w/o modules- see contract MA1861
5. Five Section Signal Head, w/LED Modules- see contract MA1861
6. 2-Way Tri-Stud Arm for Five Section Signal Head- see contract MA1861
7. Louvered Backer Plate – 8" One Section- see contract MA1861
8. Louvered Backer Plate – 12" One Section- see contract MA1861
9. Louvered Backer Plate – Five Section Head- see contract MA1861
10. Louvered Backer Plate – Three Section Head- see contract MA1861
11. Louvered Backer Plate – Four Section Head- see contract MA1861
12. 12" One Section Signal Head- see contract MA1861
13. 8" One Section Signal Head- see contract MA1861
14. Pedestrian Signal Head Housing Left Clamshell (16" x 18")
    Shipping point: **$98.25** Freight included: **$112.25** Minimum days to deliver: 30-45
15. Pedestrian Signal Head Housing Right Clamshell (16" x 18")

Shipping point: **$98.25** Freight included: **$112.25** Minimum days to deliver: 30-45

PROGRAMMABLE VEHICULAR TRAFFIC SIGNAL

16. Three Section Signal Head w/ Circular Indication Lens, w/louvered backer plate
    Shipping point: **$1,400.00** Freight included: **$1,450.00** Minimum days to deliver: 30-45

17. Three Section Signal Head w/ Arrow Indication Lens, w/louvered backer plate
    Shipping point: **$1,400.00** Freight included: **$1,450.00** Minimum days to deliver: 30-45

18. LED Lamp Module for Programmable Signal Head – Red- see contract MA1861

19. LED Lamp Module for Programmable Signal Head – Amber/Yellow- see contract MA1861

20. LED Lamp Module for Programmable Signal Head – Green- see contract MA1861

FINET COMMODITY CODE(S):
55080000000 – TRAFFIC CONTROLS AND EQUIPMENT, ELECTRIC SYSTEMS
55089000000 – TRAFFIC SIGNAL AND EQUIPMENT, ELECTRIC PARTS